10717 - Quasar Bolometri Luminosity and Spectral Energy Distributions from Radio to X-ray

Cycle: 14, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

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VISITS

Visit	*Targets*	*Configurations*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	(1) PG1100+772 (8) PG1100+772-CALIB	NIC2	1	24-Aug-2005 21:25:01.0	yes
02	(2) PG1216+069 (9) PG1216+069-CALIB	NIC2	1	24-Aug-2005 21:25:08.0	yes
03	(10) PG1259+593-CALIB (3) PG1259+593	NIC2	1	24-Aug-2005 21:25:17.0	yes
04	(11) PG1425+267-CALIB (4) PG1425+267	NIC2	1	24-Aug-2005 21:25:22.0	yes
05	(12) PG1543+489-CALIB (5) PG1543+489	NIC2	1	24-Aug-2005 21:25:28.0	yes

Visit	*Targets*	*Configurations*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
06	(6) PG1512+370 (13) PG1512+370-CALIB	NIC2	1	24-Aug-2005 21:25:33.0	yes
07	(7) PG1704+608 (14) PG1704+608-CALIB	NIC2	1	24-Aug-2005 21:25:38.0	yes

7 Total Orbits Used

ABSTRACT

We propose to build the best SED data set spanning from radio to X-ray wavelengths for 35 quasars. We will use new and archival mid-to-far IR data from Spitzer as well as other existing multi-wavelength data. We have unique quasi-simultaneous FUV/UV-optical spectra for our sample, greatly reducing the uncertainty due to quasar intrinsic time variability in the UV bump. We will derive accurate bolometric luminosities for the sample and seek to establish a more reliable and accurate way to obtain the bolometric luminosity of quasars from their partial SEDs and/or spectral properties. We will also apply multivariate analysis to the SEDs, study the quasar multi-wavelength spectral properties and their dependence on the overall SEDs, and thus better understand the physical processes quasars employ emitting across the entire electromagnetic spectrum.

HST NICMOS observations will be used to remove host galaxy contamination from the quasar SEDs. This is a joint Spitzer-HST project.

OBSERVING DESCRIPTION

We will observe the host galaxies of 7 quasars using the NICMOS2 camera and F160W filter. Each visit consists of one orbit and includes two observations of a quasar and one observation of a nearby star (<2 arcmins) that will be used to determine the PSF close in time to the quasar observation. The PSF star will be observed first followed by the quasar observations acquired by small angle maneuver (SAM). Both the PSF star observation and the first quasar observation use NICMOS MULTIACCUM STEP64 sequence at 4 positions of a NIC-SPIRAL-DITH pattern. The subpixel dithering size is 1.0875" (~14.5 NIC2 pixels) to allow better PSF sampling and cosmic ray rejection. The second observation of the quasar consists of a single short exposure without dithering. This is used to pack the orbit.

Visit

Proposal 10717, Visit 01 Thu Aug 25 01:25:40 GMT 2005

Diagnostic Status: No Diagnostics

Scientific Instruments: NIC2

Special Requirements: (none)

Patterns

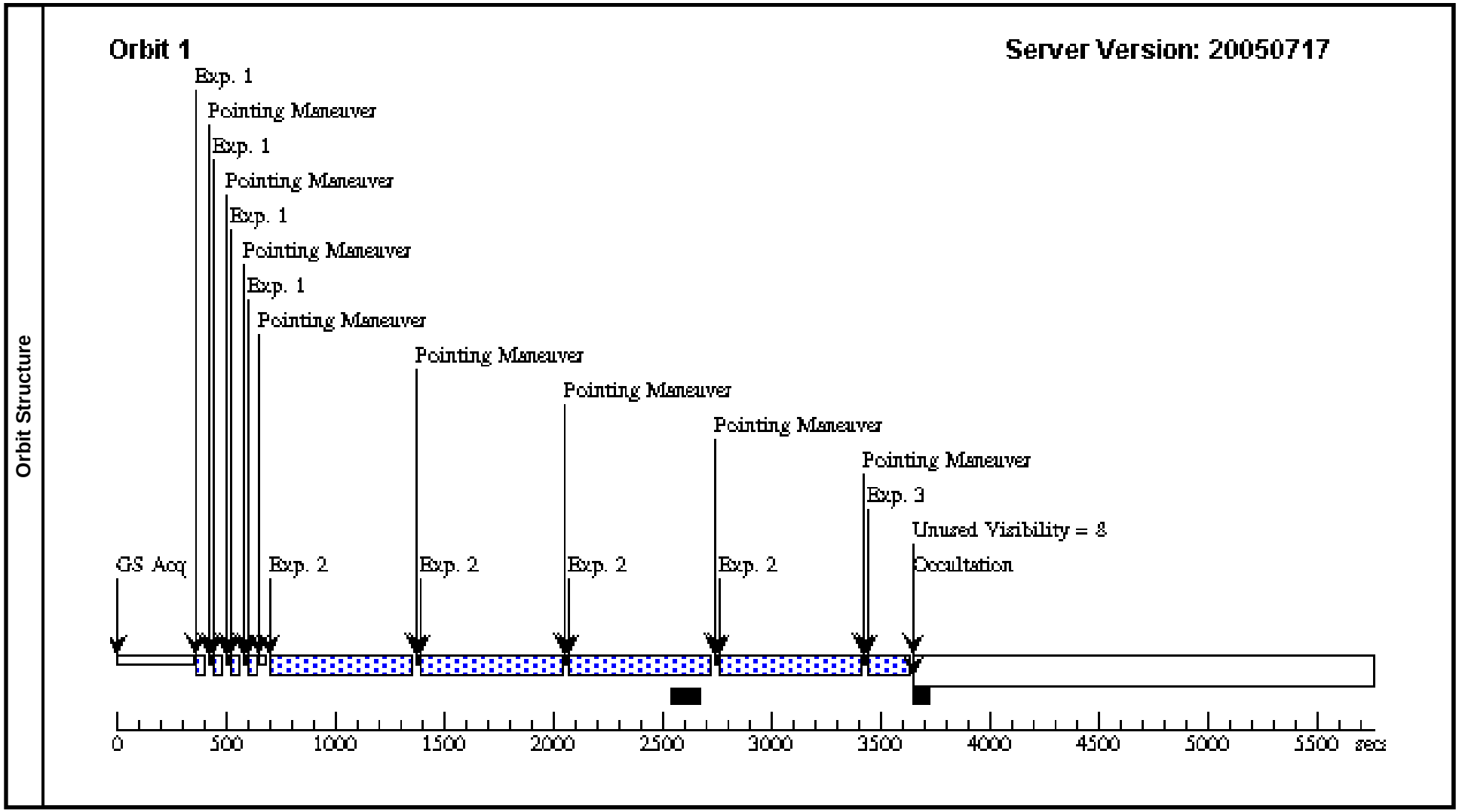
#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=NIC-SPIRAL-DITH	Coordinate Frame=POS-TARG		(1), (2)
	Purpose=DITHER	Pattern Orientation=0		
	Number Of Points=4	Angle Between Sides=		
	Point Spacing=1.087	Center Pattern=true		
	Line Spacing=			

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	PG1100+772	RA: 11 04 13.7700 (166.0573750d)	Proper Motion RA: 0.0s/yr	V=15.7	Coordinate Source: GSC_SURVEY_PLATE
		Dec: +76 58 58.18 (76.98283d)	Proper Motion Dec: 0.0"/yr	H=13.93+/-0.048	
		Equinox: J2000	Epoch of Position:		
		Plate Id: 02D3	Redshift: 0.311		
Comments: H mag is from 2MASS point source catalog.					
(8)	PG1100+772-CALIB	RA: 11 04 0.1900 (166.0007917d)		V=11.68+/-0.21	Coordinate Source: GUIDE_STAR_CATALOG
	Alt Name1: GSC4549-2056	Dec: +76 58 38.10 (76.97725d)		H=10.7+/-0.023	
		Equinox: J2000			
		Plate Id: 02D3			
Comments: H mag is from 2MASS PSC.					

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	PSF	(8) PG1100+772-CALIB	NIC2, MULTIACCUM, NIC2-FIX	F160W	SAMP-SEQ=STEP64; NSAMP=8		Pattern 1-1 (1)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
2		(1) PG1100+772	NIC2, MULTIACCUM, NIC2-FIX	F160W	SAMP-SEQ=STEP64; NSAMP=18		Pattern 2-2 (1)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
3		(1) PG1100+772	NIC2, MULTIACCUM, NIC2	F160W	SAMP-SEQ=STEP16; NSAMP=17			*[==>]*	***[1]***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Orbit 1
Server Version: 20050717
Exp. 1
Pointing Maneuver
Exp. 1
Pointing Maneuver
Exp. 1
Pointing Maneuver
Exp. 1
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Exp. 3
Unused Visibility = 8
GS Acq
Exp. 2
Exp. 2
Exp. 2
Exp. 2
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 10717, Visit 02 Thu Aug 25 01:25:40 GMT 2005

Diagnostic Status: No Diagnostics

Scientific Instruments: NIC2

Special Requirements: (none)

Patterns

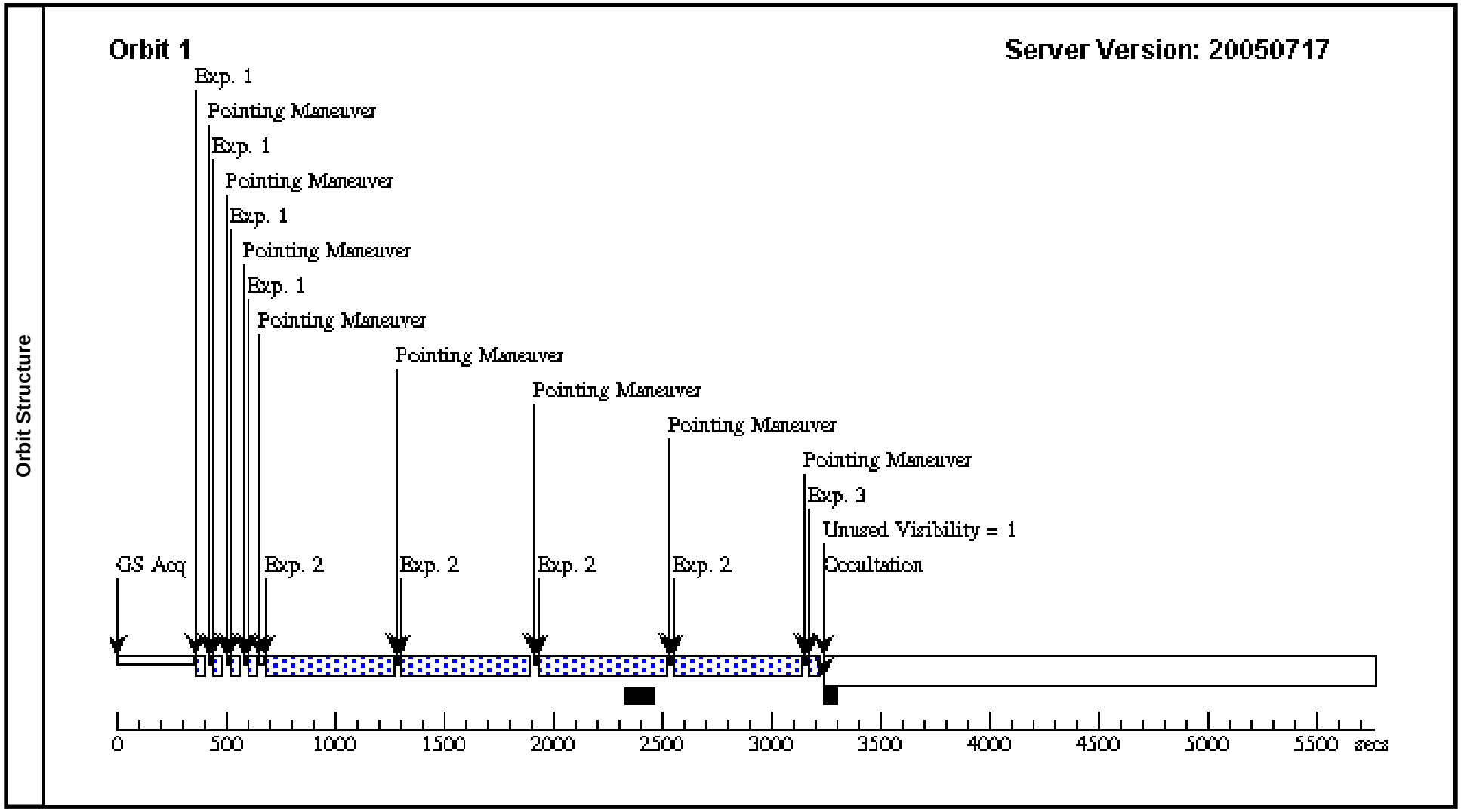
#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=NIC-SPIRAL-DITH	Coordinate Frame=POS-TARG		(1), (2)
	Purpose=DITHER	Pattern Orientation=0		
	Number Of Points=4	Angle Between Sides=		
	Point Spacing=1.087	Center Pattern=true		
	Line Spacing=			

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	PG1216+069	RA: 12 19 21.0000 (184.8375000d)	Proper Motion RA: 0.0s/yr	V=14.93+/-0.41	Coordinate Source: GUIDE_STAR_CATALOG
	Alt Name1: GSC0287-0920	Dec: +06 38 38.40 (6.64400d)	Proper Motion Dec: 0.0"/yr	H=13.97+/-0.051	
		Equinox: J2000	Epoch of Position:		
		Plate Id: 01UQ	Redshift: 0.332		
Comments: H mag is from 2MASS PSC.					
(9)	PG1216+069-CALIB	RA: 12 19 21.5600 (184.8398333d)		V=13.22+/-0.41	Coordinate Source: GUIDE_STAR_CATALOG
	Alt Name1: GSC0287-0102	Dec: +06 38 44.20 (6.64561d)		H=11.32+/-0.026	
		Equinox: J2000			
		Plate Id: 01UQ			
Comments: H mag is from 2MASS PSC.					

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	PSF	(9) PG1216+069-CALIB	NIC2, MULTIACCUM, NIC2-FIX	F160W	SAMP-SEQ=STEP64; NSAMP=8		Pattern 1-1 (1)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
2		(2) PG1216+069	NIC2, MULTIACCUM, NIC2-FIX	F160W	SAMP-SEQ=STEP64; NSAMP=17		Pattern 2-2 (1)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
3		(2) PG1216+069	NIC2, MULTIACCUM, NIC2	F160W	SAMP-SEQ=STEP8; NSAMP=10			*[==>]*	***[1]***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Server Version: 20050717
Exp. 1
Pointing Maneuver
Exp. 1
Pointing Maneuver
Exp. 1
Pointing Maneuver
Exp. 1
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Exp. 3
Unused Visibility = 1
Occultation
GS Acq
Exp. 2
Exp. 2
Exp. 2
Exp. 2
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs

Visit

Proposal 10717, Visit 03 Thu Aug 25 01:25:42 GMT 2005

Diagnostic Status: No Diagnostics

Scientific Instruments: NIC2

Special Requirements: (none)

Patterns

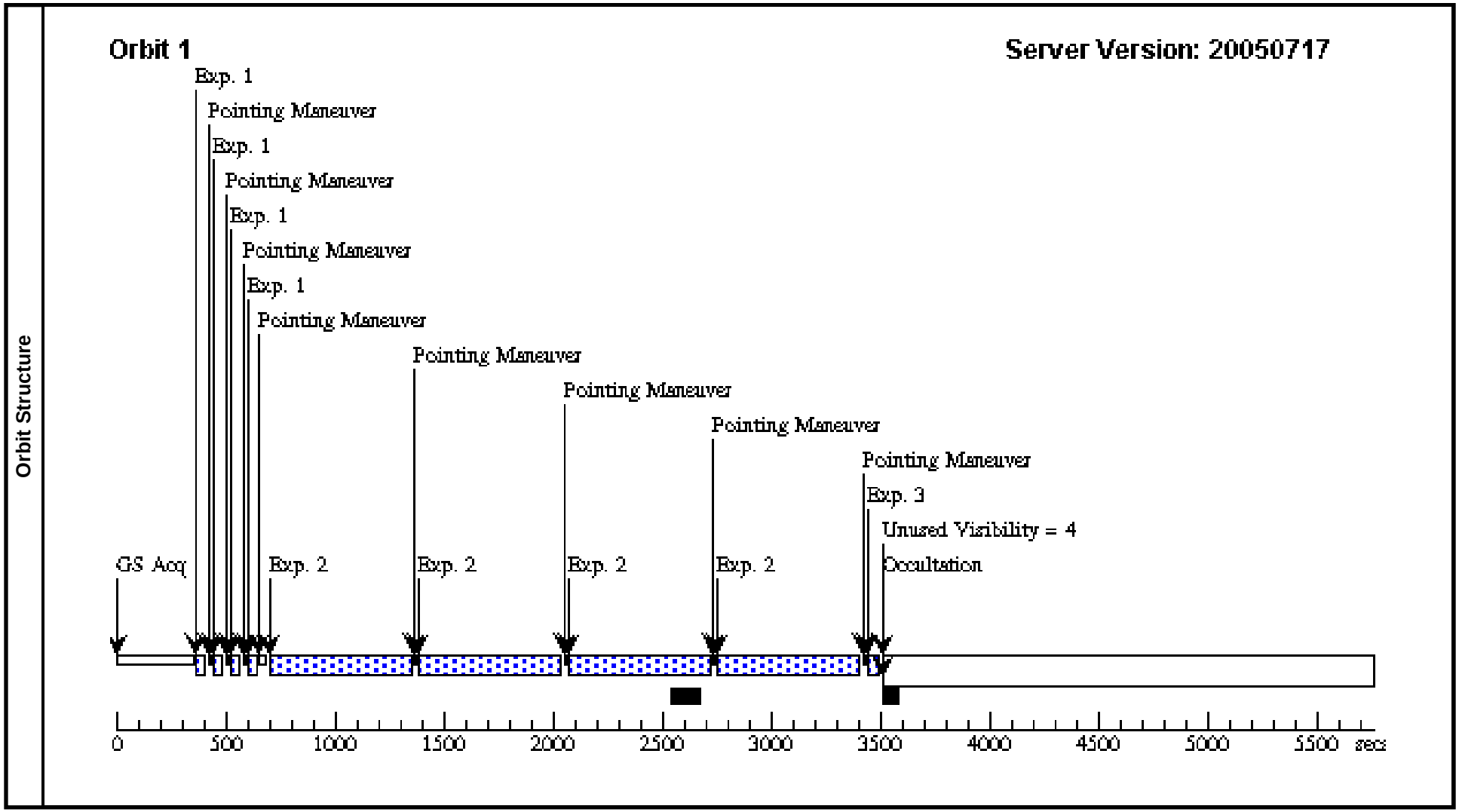
#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=NIC-SPIRAL-DITH	Coordinate Frame=POS-TARG		(1), (2)
	Purpose=DITHER	Pattern Orientation=0		
	Number Of Points=4	Angle Between Sides=		
	Point Spacing=1.087	Center Pattern=true		
	Line Spacing=			

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	PG1259+593	RA: 13 01 12.9400 (195.3039167d)	Proper Motion RA: 0.0s/yr	V=15.8	Coordinate Source: GSC_SURVEY_PLATE
		Dec: +59 02 6.76 (59.03521d)	Proper Motion Dec: 0.0"/yr	H=13.98+/-0.045	
		Equinox: J2000	Epoch of Position:		
		Plate Id: 01R2	Redshift: 0.472		
Comments: H mag is from 2MASS PSC.					
(10)	PG1259+593-CALIB	RA: 13 01 14.0300 (195.3084583d)		V=(?)	Coordinate Source: GSC_SURVEY_PLATE
		Dec: +59 01 20.01 (59.02222d)		H=14.28+/-0.046	
		Equinox: J2000			
		Plate Id: 01R2			
Comments: H mag is from 2MASS PSC.					

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	PSF	(10) PG1259+593-CALIB	NIC2, MULTIACCUM, NIC2-FIX	F160W	SAMP-SEQ=STEP64; NSAMP=8		Pattern 1-1 (1)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
2		(3) PG1259+593	NIC2, MULTIACCUM, NIC2-FIX	F160W	SAMP-SEQ=STEP64; NSAMP=18		Pattern 2-2 (1)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
3		(3) PG1259+593	NIC2, MULTIACCUM, NIC2	F160W	SAMP-SEQ=STEP8; NSAMP=10			*[==>]*	***[1]***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Orbit 1
Server Version: 20050717
Exp. 1
Pointing Maneuver
Exp. 1
Pointing Maneuver
Exp. 1
Pointing Maneuver
Exp. 1
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Exp. 3
Unused Visibility = 4
GS Acq
Exp. 2
Exp. 2
Exp. 2
Exp. 2
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 10717, Visit 04 Thu Aug 25 01:25:42 GMT 2005

Diagnostic Status: No Diagnostics

Scientific Instruments: NIC2

Special Requirements: (none)

Patterns

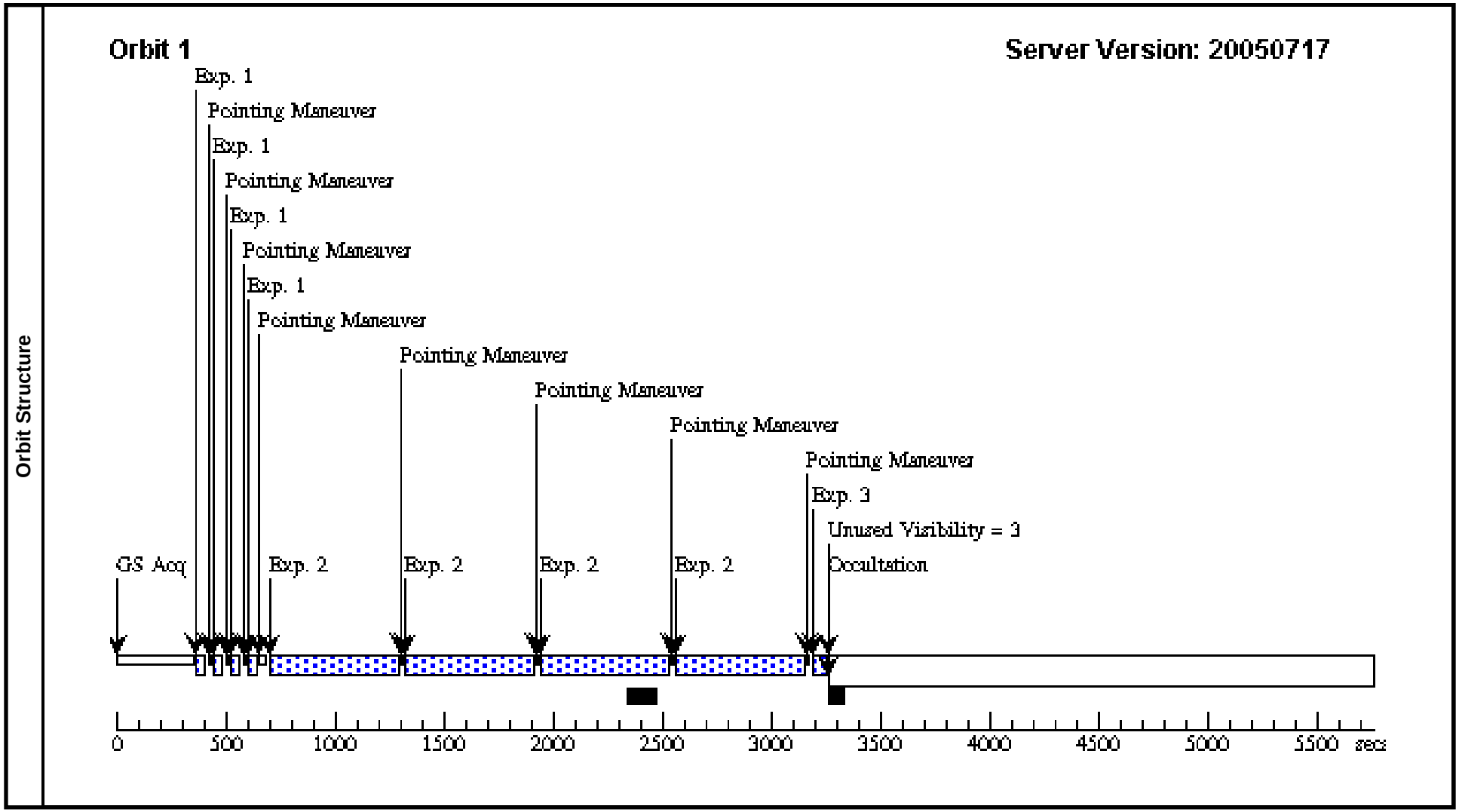
#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=NIC-SPIRAL-DITH	Coordinate Frame=POS-TARG		(1), (2)
	Purpose=DITHER	Pattern Orientation=0		
	Number Of Points=4	Angle Between Sides=		
	Point Spacing=1.087	Center Pattern=true		
	Line Spacing=			

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	PG1425+267	RA: 14 27 35.6600 (216.8985833d)	Proper Motion RA: 0.0s/yr	V=15.7	Coordinate Source: GSC_SURVEY_PLATE
		Dec: +26 32 14.85 (26.53746d)	Proper Motion Dec: 0.0"/yr	H=14.44+/-0.046	
		Equinox: J2000	Epoch of Position:		
		Plate Id: 01PZ	Redshift: 0.364		
Comments: H mag is from 2MASS PSC.					
(11)	PG1425+267-CALIB	RA: 14 27 33.4700 (216.8894583d)		V=(?)	Coordinate Source: GSC_SURVEY_PLATE
		Dec: +26 32 47.63 (26.54656d)		R=17.93+/-0.43	
		Equinox: J2000			
		Plate Id: 01PZ			
Comments: R mag is from GSC 2.2.					

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	PSF	(11) PG1425+267-CALIB	NIC2, MULTIACCUM, NIC2-FIX	F160W	SAMP-SEQ=STEP64; NSAMP=8		Pattern 1-1 (1)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
2		(4) PG1425+267	NIC2, MULTIACCUM, NIC2-FIX	F160W	SAMP-SEQ=STEP64; NSAMP=17		Pattern 2-2 (1)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
3		(4) PG1425+267	NIC2, MULTIACCUM, NIC2	F160W	SAMP-SEQ=STEP8; NSAMP=11			*[==>]*	***[1]***


Orbit Structure
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Server Version: 20050717
Exp. 1
Pointing Maneuver
Exp. 1
Pointing Maneuver
Exp. 1
Pointing Maneuver
Exp. 1
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Exp. 3
Unused Visibility = 3
Occultation
GS Acq
Exp. 2
Exp. 2
Exp. 2
Exp. 2
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 10717, Visit 05 Thu Aug 25 01:25:43 GMT 2005

Diagnostic Status: No Diagnostics

Scientific Instruments: NIC2

Special Requirements: (none)

Patterns

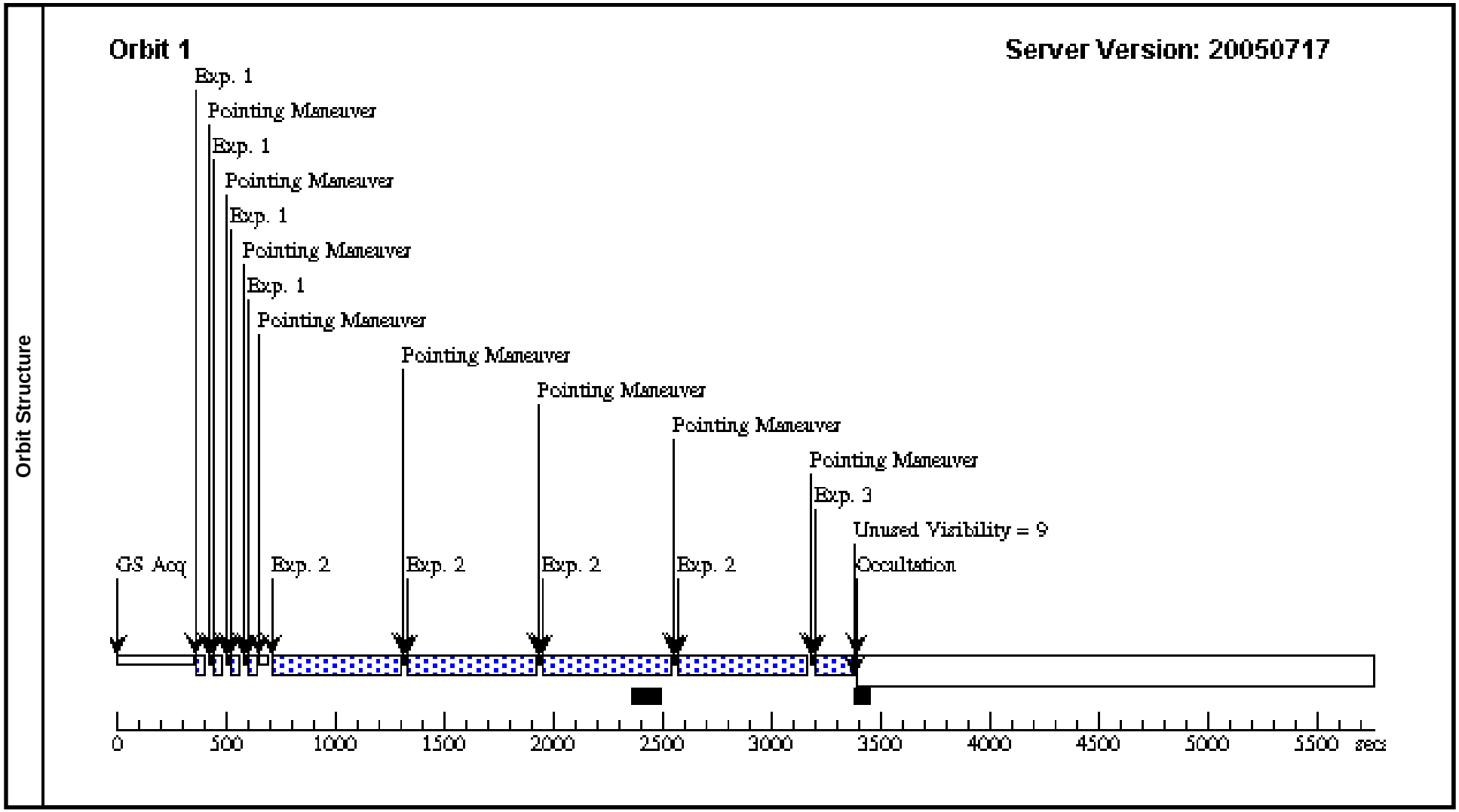
#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=NIC-SPIRAL-DITH	Coordinate Frame=POS-TARG		(1), (2)
	Purpose=DITHER	Pattern Orientation=0		
	Number Of Points=4	Angle Between Sides=		
	Point Spacing=1.087	Center Pattern=true		
	Line Spacing=			

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	PG1543+489	RA: 15 45 30.2400 (236.3760000d)	Proper Motion RA: 0.0s/yr	V=16.1	Coordinate Source: GSC_SURVEY_PLATE
		Dec: +48 46 8.96 (48.76916d)	Proper Motion Dec: 0.0"/yr	H=14.29+/-0.046	
		Equinox: J2000	Epoch of Position:		
		Plate Id: 00T9	Redshift: 0.4		
Comments: H mag is from 2MASS PSC.					
(12)	PG1543+489-CALIB Alt Name1: GSC3493-0801	RA: 15 45 21.8900 (236.3412083d)		V=14.67+/-0.4	Coordinate Source: GUIDE_STAR_CATALOG
		Dec: +48 45 32.60 (48.75906d)		H=12.56+/-0.032	
		Equinox: J2000			
		Plate Id: 00T9			

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	PSF	(12) PG1543+489-CALIB	NIC2, MULTIACCUM, NIC2-FIX	F160W	SAMP-SEQ=STEP64; NSAMP=8		Pattern 1-1 (1)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
2		(5) PG1543+489	NIC2, MULTIACCUM, NIC2-FIX	F160W	SAMP-SEQ=STEP64; NSAMP=17		Pattern 2-2 (1)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
3		(5) PG1543+489	NIC2, MULTIACCUM, NIC2	F160W	SAMP-SEQ=STEP16; NSAMP=16			*[==>]*	***[1]***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Pointing Maneuver
Exp. 1
Pointing Maneuver
Exp. 1
Pointing Maneuver
Exp. 1
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Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Exp. 3
Unused Visibility = 9
GS Acq
Exp. 2
Exp. 2
Exp. 2
Exp. 2
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 10717, Visit 06 Thu Aug 25 01:25:43 GMT 2005

Diagnostic Status: No Diagnostics

Scientific Instruments: NIC2

Special Requirements: (none)

Patterns

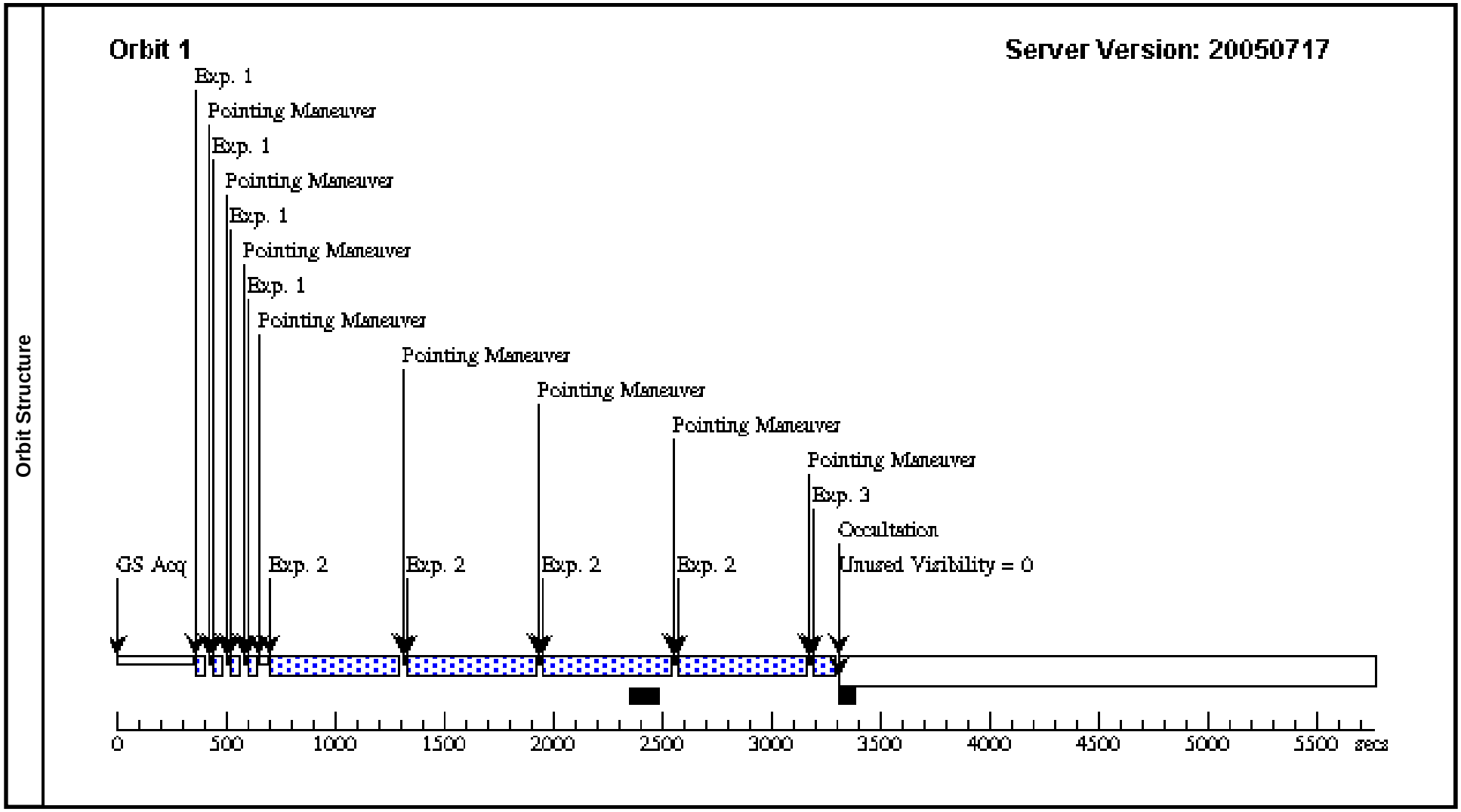
#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=NIC-SPIRAL-DITH	Coordinate Frame=POS-TARG		(1), (2)
	Purpose=DITHER	Pattern Orientation=0		
	Number Of Points=4	Angle Between Sides=		
	Point Spacing=1.087	Center Pattern=true		
	Line Spacing=			

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(6)	PG1512+370	RA: 15 14 43.0500 (228.6793750d)	Proper Motion RA: 0.0s/yr	V=16.0	Coordinate Source: GSC_SURVEY_PLATE
		Dec: +36 50 50.13 (36.84726d)	Proper Motion Dec: 0.0"/yr	H=14.70+/-0.064	
		Equinox: J2000	Epoch of Position:		
		Plate Id: 01R7	Redshift: 0.37		
Comments: H mag is from 2MASS PSC.					
(13)	PG1512+370-CALIB	RA: 15 14 37.9900 (228.6582917d)		V=13.08+/-0.4	Coordinate Source: GUIDE_STAR_CATALOG
	Alt Name1: GSC2569-0032	Dec: +36 51 6.30 (36.85175d)		H=11.18+/-0.021	
		Equinox: J2000			
		Plate Id: 01R7			
Comments: H mag is from 2MASS PSC.					

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	PSF	(13) PG1512+370-CALIB	NIC2, MULTIACCUM, NIC2-FIX	F160W	SAMP-SEQ=STEP64; NSAMP=8		Pattern 1-1 (1)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
2		(6) PG1512+370	NIC2, MULTIACCUM, NIC2-FIX	F160W	SAMP-SEQ=STEP64; NSAMP=17		Pattern 2-2 (1)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
3		(6) PG1512+370	NIC2, MULTIACCUM, NIC2	F160W	SAMP-SEQ=STEP8; NSAMP=16			*[==>]*	***[1]***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Server Version: 20050717
Exp. 1
Pointing Maneuver
Exp. 1
Pointing Maneuver
Exp. 1
Pointing Maneuver
Exp. 1
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Exp. 3
Occultation
GS Acq
Exp. 2
Exp. 2
Exp. 2
Exp. 2
Unused Visibility = 0
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs

Visit

Proposal 10717, Visit 07 Thu Aug 25 01:25:44 GMT 2005

Diagnostic Status: No Diagnostics

Scientific Instruments: NIC2

Special Requirements: (none)

Patterns

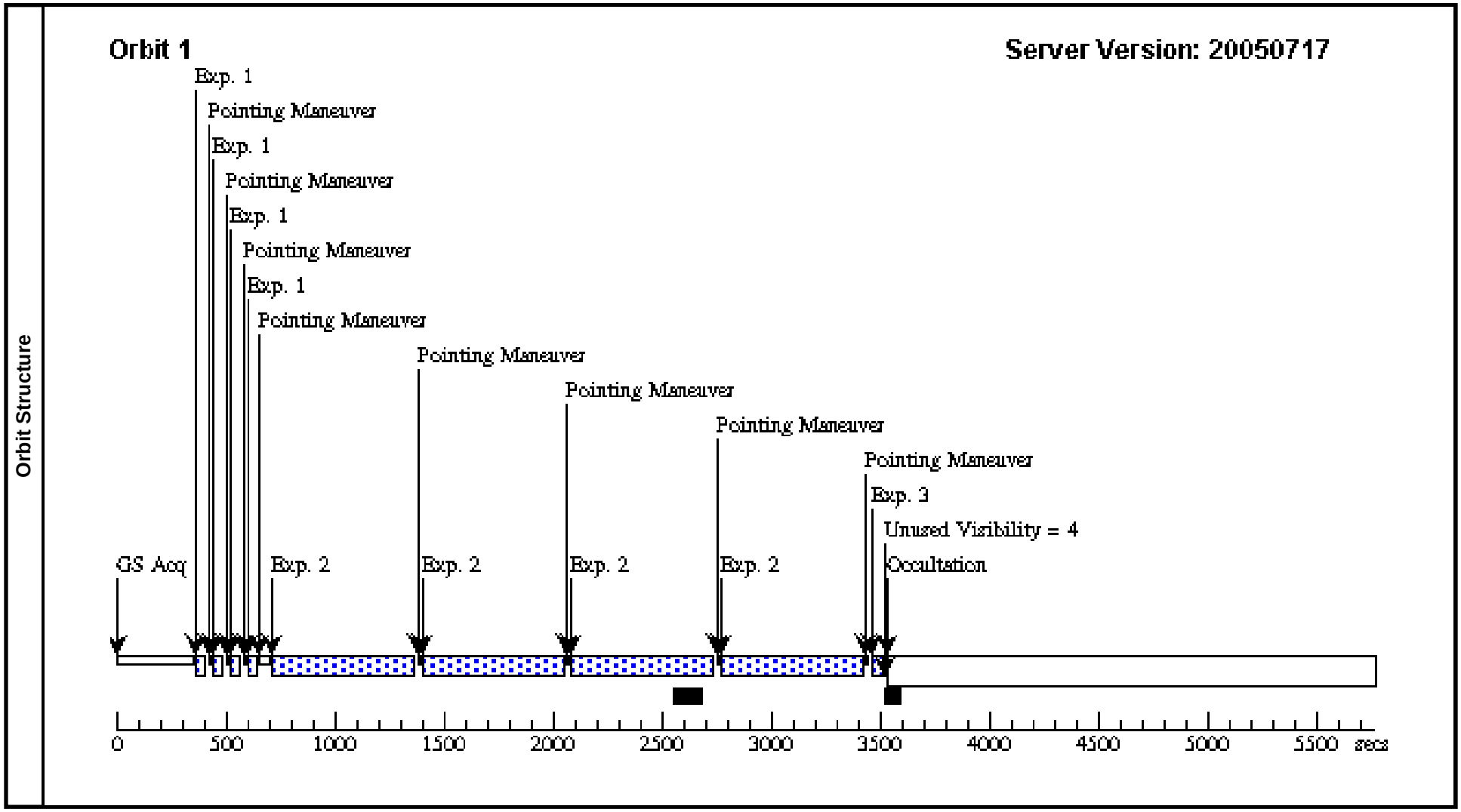
#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=NIC-SPIRAL-DITH	Coordinate Frame=POS-TARG		(1), (2)
	Purpose=DITHER	Pattern Orientation=0		
	Number Of Points=4	Angle Between Sides=		
	Point Spacing=1.087	Center Pattern=true		
	Line Spacing=			

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(7)	PG1704+608	RA: 17 04 41.3200 (256.1721667d)	Proper Motion RA: 0.0s/yr	V=14.57+/-0.36	Coordinate Source: GSC_SURVEY_PLATE
	Alt Name1: GSC4191-0346	Dec: +60 44 29.99 (60.74166d)	Proper Motion Dec: 0.0"/yr	H=13.47+/-0.038	
		Equinox: J2000	Epoch of Position:		
		Plate Id: 00T2	Redshift: 0.372		
Comments: H mag is from 2MASS PSC. GSC position has big error (1.2"). Not used.					
(14)	PG1704+608-CALIB	RA: 17 04 41.7400 (256.1739167d)		V=14.41+/-0.36	Coordinate Source: GUIDE_STAR_CATALOG
	Alt Name1: GSC4191-0590	Dec: +60 42 49.10 (60.71364d)		H=13.03+/-0.032	
		Equinox: J2000			
		Plate Id: 00T2			
Comments: H mag is from 2MASS PSC.					

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	PSF	(14) PG1704+608-CALIB	NIC2, MULTIACCUM, NIC2-FIX	F160W	SAMP-SEQ=STEP64; NSAMP=8		Pattern 1-1 (1)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
2		(7) PG1704+608	NIC2, MULTIACCUM, NIC2-FIX	F160W	SAMP-SEQ=STEP64; NSAMP=18		Pattern 2-2 (1)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
3		(7) PG1704+608	NIC2, MULTIACCUM, NIC2	F160W	SAMP-SEQ=STEP8; NSAMP=10			*[==>]*	***[1]***


Orbit Structure
Orbit 1
Server Version: 20050717
Exp. 1
Pointing Maneuver
Exp. 1
Pointing Maneuver
Exp. 1
Pointing Maneuver
Exp. 1
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Exp. 3
Unused Visibility = 4
GS Acq
Exp. 2
Exp. 2
Exp. 2
Exp. 2
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs